

REMARKS

Claims 1, 5-8, 11, 13, 14, 18 and 21 have been amended to improve form and claim 17 has been canceled without prejudice or disclaimer. Claims 1-16 and 18-23 are now pending in this application.

Claims 1-23 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of co-pending application no. 09/877,122. The rejection is respectfully traversed.

The Office Action states that claims 1-23 of this application and claims 1-20 of co-pending application 09/877,122 disclose similar devices, but admits that the co-pending application 09/877,122 does not mention frames having a priority indicator (Office Action – page 2). The Office Action further states that it would have been obvious to include a priority indicator in a frame “to further classify packets into various groups so that frames with higher precedence are processed ahead of lower precedence packets” (Office Action – pages 2-3). The applicants respectfully disagree.

First, the applicants note that the Examiner’s reasoning as to why claims 1-23 of this application are obvious in view of the claims of co-pending application 09/877,122 is merely a conclusory statement regarding a benefit of modifying the claims of co-pending application 09/877,122 to read on the claims in this application. The applicants assert that the only motivation for modifying the claims of the co-pending application 09/877,122 to include a priority indicator in a pause frame comes from the present application. Such motivation may not be properly relied upon to reject the pending claims as being obvious over the claims of co-pending application 09/877,122.

Accordingly, withdrawal of the rejection is respectfully requested.

Claims 1-3, 11-13 and 21 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Drummond-Murray (U.S. Patent No. 6,667,985) in view of Crinion et al. (U.S. Patent No. 6,181,699; hereinafter Crinion). The rejection is respectfully traversed.

Claim 1 recites a network device that includes a logic device configured to detect a condition associated with a resource on the network device. Claim 1, as amended, also recites that the network device includes a frame generating device configured to generate a pause frame requesting suspension of data traffic in response to the detection of the condition, where the pause frame includes a priority indicator identifying a first priority.

The Office Action admits that Drummond-Murray does not disclose generating a pause frame that includes a priority indicator (Office Action – page 4). The Office Action, however, states that Crinion discloses inserting tag data into a frame which includes priority information for the frame and points to col. 3, lines 13-15 and 62-67 for support (Office Action – page 4).

Crinion is directed to an apparatus and method for assigning VLAN tags to frames received at a port (Crinion – Abstract). Crinion at col. 2, line 63 to col. 3, line 15 discloses that a default tag may be assigned to a frame based on the port at which it was received. This portion of Crinion further discloses that frame memory 120 stores at least a part of a frame and search circuit 130 reads the frame information from frame memory 120 and does a lookup to identify a VLAN tag to be inserted into a frame. Tagging circuit 140 then writes the VLAN tag into the frame stored in frame memory 120. Crinion at col. 4, lines 62-67 discloses that the VLAN tag includes a tag protocol identifier (TPID) field and a tag control information (TCI) field. The TCI field includes three bits of priority information. Therefore, this portion of Crinion merely discloses that a VLAN tag inserted into a frame

includes priority information. Crinion, however, has nothing to do with generating pause frames, much less including a priority indicator in a pause frame.

Therefore, even if Crinion was combined with Drummond-Murray, the combination would not disclose or suggest generating a pause frame that includes a priority indicator identifying a first priority, as required by claim 1.

Claim 1, as amended, further recites a transmit device configured to transmit the pause frame to at least one station, where the pause frame requests the at least one station to suspend transmission of data frames corresponding to the first priority to the network device and does not affect transmission of data frames corresponding to a priority other than the first priority. A similar feature was recited in original claim 6.

As to original claim 6, the Office Action states that Drummond-Murray discloses suspending transmission of data frames relating to a first priority and continuing transmission of data frames having a priority other than the first priority and points to col. 4, lines 1-14 for support (Office Action – page 9). The applicants respectfully disagree.

Drummond-Murray at col. 4, lines 1-14 discloses that specified ports may be excluded from any traffic reduction and specific nodes may function as nodes that are guaranteed as much traffic as they require. This portion of Drummond-Murray also discloses that high priority traffic may continue while low priority is restricted. This portion of Drummond-Murray further discloses that the control process can examine types of packets so that ports which contain large amounts of ‘web-browsing’ packets may be penalized more than a port carrying mostly network management traffic.

The above-referenced portion of Drummond-Murray merely discloses that a control process, presumably located on a switch, may examine types of packets to determine which

port(s) should be subjected to traffic reduction. Such a disclosure is not equivalent to and does not suggest a transmit device configured to transmit the pause frame to at least one station, where the pause frame requests the at least one station to suspend transmission of data frames corresponding to the first priority to the network device and does not affect transmission of data frames corresponding to a priority other than the first priority, as recited in amended claim 1. That is, Drummond-Murray does not disclose or suggest suspending transmission of data frames based on a priority indicator included in a pause frame, as required by amended claim 1. Drummond-Murray, in contrast to claim 1, merely discloses examining types of packets on the switch so that some ports may be restricted more than other ports.

For at least the reasons discussed above, the combination of Drummond-Murray and Crinion does not disclose or suggest each of the features of amended claim 1.

In addition, even if, for the sake of argument, the combination of Drummond-Murray and Crinion could be reasonably construed to disclose each of the features of claim 1, the applicants assert that it would not have been obvious to combine the disclosure of Crinion with Drummond-Murray.

For example, the Office Action states that it would have been obvious to incorporate the priority indication within a frame as taught by Crinion into the invention of Drummond-Murray “in order to provide more intelligent tag data in frames which allows for more intelligent and rank of order in processing frames based upon critical nature of the frame” (Office Action – page 5). The applicants respectfully disagree.

First, Drummond-Murray is directed to a system for reducing congestion on a switch (Drummond-Murray – Abstract), while Crinion is directed to a system for assign VLAN

tags to frames (Crinion – Abstract). These references are essentially unrelated, other than the fact that both references involve switching. The applicants assert that it would not have been obvious to combine a feature of Crinion that deals with VLAN tags with Drummond-Murray, which deals with congestion control, without the benefit of the applicants' disclosure due to the disparate nature of the references.

For at least the reasons discussed above, withdrawal of the rejection and allowance of claim 1 are respectfully requested.

Claims 2 and 3 are dependent on claim 1 and are believed to be allowable for at least the reasons claim 1 is allowable. Accordingly, withdrawal of the rejection and allowance of claims 2 and 3 are respectfully requested.

Claims 11, as amended, recite features similar to claim 1. For reasons similar to those discussed above with respect to claim 1, withdrawal of the rejection and allowance of claim 11 are respectfully requested.

Claims 12 and 13 are dependent on claim 11 and are believed to be allowable for at least the reasons claim 11 is allowable. Accordingly, withdrawal of the rejection and allowance of claims 12 and 13 are respectfully requested.

Claim 21 recites a computer-readable medium having a data structure that includes a priority field. Claim 21, as amended, recites that the priority field includes information representing a priority level associated with data frames for which data transmissions are to be suspended. Similar to the discussion above with respect to claim 1, the combination of Drummond-Murray and Crinion does not disclose or suggest including a priority field in a data structure that represents a priority level associated with data frames for which data transmissions are to be suspended, as required by amended claim 21.

In addition, it would not have been obvious to combine Drummond-Murray and Crinion for the reasons discussed above with respect to claim 1. Accordingly, withdrawal of the rejection and allowance of claim 21 are respectfully requested.

Claims 4-8, 10, 14-18, 20, 22 and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Drummond-Murray in view of Crinion and further in view of Lyon (U.S. Patent No. 6,721,273). The rejection is respectfully traversed.

Claims 4-8 are dependent on claim 1 and are believed to be allowable for at least the reasons claim 1 is allowable. Lyon does not make up for the deficiencies in the combination of Drummond-Murray and Crinion discussed above with respect to claim 1. In addition, claims 4-8 disclose additional features not disclosed or suggested by the combination of Drummond-Murray, Crinion and Lyon.

For example, claim 4 recites a plurality of queues for storing frame forwarding information, where the plurality of queues have different levels of priority. Claim 4 also recites a priority detection device configured to identify a priority associated with a data frame received by the network device, and store frame forwarding information associated with the data frame in one of a plurality of queues based on the identified priority. The Office Action admits that neither Drummond-Murray nor Crinion discloses these features, but states that Lyon discloses these features and points to Figs. 3 and 6, col. 6, lines 10-29 and col. 7, lines 28-37 (Office Action – page 7). The applicants respectfully disagree.

Lyon at col. 6, lines 10-29 discloses that demultiplexer 28 receives incoming cells and divides cells into flows based on emission priority levels and sends the cells to output queues OP0 to OP3 (Fig. 3). Lyon at col. 7, lines 28-37 discloses that cells of emission priorities p0 to p3 are stored in a set of input queues P0 to P3 (Fig. 6). These portions of

Lyon do not disclose or suggest storing frame forwarding information associated with data frames in one of the plurality of queues based on the identified priority, as recited in claim 4. In contrast, these portions of Lyon disclose storing cells in various input and output queues, not frame forwarding information.

Therefore, even if Lyon was combined with the combination of Drummond-Murray and Crinion, the combination would not disclose or suggest each of the features of claim 4.

In addition, even if, for the sake of argument, the combination of Drummond-Murray, Crinion and Lyon could be reasonably construed to disclose each of the features of claim 4, the applicants assert that it would not have been obvious to combine the disclosure of Lyon with the combination of Drummond-Murray and Crinion.

For example, the Office Action states that it would have been obvious to incorporate the features of Lyon into the invention of Drummond-Murray and Crinion “in order to improve upon the flow of traffic in and out of a switch and to provide more reliability such that higher priority traffic will be given a better chance of making it through congestion over low priority traffic” (Office Action – pages 7-8). The applicants respectfully disagree.

First, the applicants note that no portion of any of the three references is pointed to as providing objective motivation for combining Lyon with Drummond-Murray and Crinion. In addition, the motivation provided for combining Lyon with Drummond-Murray and Crinion is merely a conclusory statement regarding an alleged benefit of the combination. Such motivation does not satisfy the requirements of 35 U.S.C. § 103.

For at least the reasons discussed above, withdrawal of the rejection and allowance of claim 4 are respectfully requested.

Claim 5 recites that the logic device is further configured to detect the condition when frame forwarding information associated with a predetermined number of data frames having the first priority are stored in a first one of the plurality of queues.

Since the combination of Drummond-Murray, Crinion and Lyon does not disclose storing frame forwarding information in a plurality of queues, the combination cannot disclose or suggest detecting the condition when frame forwarding information associated with a predetermined number of data frames having the first priority are stored in a first one of the plurality of queues.

For at least this additional reason, withdrawal of the rejection and allowance of claim 5 are respectfully requested.

Claims 14-16, 18 and 20 are dependent on claim 11 and are believed to be allowable for at least the reasons claim 11 is allowable. Lyon does not make up for the deficiencies in the combination of Drummond-Murray and Crinion discussed above with respect to claim 11. In addition, claims 14-16, 18 and 20 disclose additional features not disclosed or suggested by the combination of Drummond-Murray, Crinion and Lyon.

For example, claim 14 recites features similar to claim 5. For reasons similar to those discussed above with respect to claim 5, withdrawal of the rejection and allowance of claim 14 are respectfully requested.

Claim 22 recites a data communication system that includes a first device and a second device. The first device is configured to detect a congestion condition when at least a predetermined number of data frames of a first priority are being processed by the first device. The Office Action states that Drummond-Murray discloses detecting a congestion condition when at least a predetermined number of frames are being processed by the first

device and points to col. 6, lines 19-40 and col. 7, lines 16-26 for support (Office Action – page 12).

Drummond-Murray at col. 6, lines 19-40 discloses defining a fullness threshold corresponding to some predetermined physical capacity of an output buffer. Drummond-Murray at col. 7, lines 16-26 discloses identifying a port which is most likely causing congestion. Neither of these portions of Drummond-Murray, nor any other portions, discloses or suggests detecting a congestion condition when at least a predetermined number of data frames of a first priority are being processed by the first device, as recited in claim 22.

Claim 22 also recites that the first device is configured to generate a pause frame requesting suspension of data transmissions in response to the congestion condition, where the pause frame includes a priority indicator corresponding to the first priority. Claim 22 further recites that the second device is configured to receive the pause frame, suspend transmission of data frames relating to the first priority, and continue transmission of data frames relating to a second priority.

Similar to the discussion above with respect to claim 1, neither Drummond-Murray nor Crinion discloses or suggest including a priority indicator in a pause frame, much less that the priority indicator corresponds to the claimed first priority. In addition, neither Drummond-Murray nor Crinion discloses or suggest a second device that is configured to receive the pause frame and suspend transmission of data frames relating to the first priority and continue transmission of data frames relating to a second priority, as recited in claim 22.

The applicants note that Lyon has been used in the rejection of claim 22 as disclosing determining a priority associated with received data frames (Office Action – page

14). Lyon, however, does not make up for the deficiencies in the combination of Drummond-Murray and Crinion discussed above.

For at least these reasons, the combination of Drummond-Murray, Crinion and Lyon does not disclose or suggest each of the features of claim 22.

Lastly, the applicants assert that it would not have been obvious to combine Drummond-Murray, Crinion and Lyon for the reasons discussed above with respect to claims 1 and 4.

For at least these reasons, withdrawal of the rejection and allowance of claim 22 are respectfully requested.

Claim 23 recites features similar to some of those discussed above with respect to claim 22. For reasons similar to those discussed above, withdrawal of the rejection and allowance of claim 23 are respectfully requested.

Claims 9 and 19 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Drummond-Murray in view of Crinion and further in view of admitted prior art. The rejection is respectfully traversed.

Initially, the applicants note that claim 9 is dependent on claim 1 and is believed to be allowable for at least the reasons claim 1 is allowable. The admitted prior art does not make up for the deficiencies in the combination of Drummond-Murray and Crinion discussed above with respect to claim 1. In addition, claim 9 recites features not disclosed by the combination of Drummond-Murray, Crinion and the admitted prior art.

For example, claim 9 recites that the transmit device is further configured to transmit an auto-negotiation message to the at least one station, the auto-negotiation message including information relating to the priority indicator.

The Office Action admits that Drummond-Murray and Crinion do not disclose this feature, but states that the admitted prior art discloses that the auto-negotiation feature is defined in the IEEE 802.3 standard and that “transmitting messages using such a feature was well known and in the public’s knowledge at the time of the invention was made” (Office Action – page 16). The applicants respectfully disagree.

The mere fact that an auto-negotiation feature is defined in IEEE 802.3 does not read on or suggest transmitting an auto-negotiation message that includes information relating to a priority indicator included in a pause frame, as required by claim 9. Therefore, the combination of Drummond-Murray, Crinion and the admitted prior art does not disclose or suggest each of the features recited in claim 9. For at least this additional reason, withdrawal of the rejection and allowance of claim 9 are respectfully requested.

Claim 19 is dependent on claim 11 and is believed to be allowable for at least the reasons claim 11 is allowable. In addition, claim 19 recites a feature similar to claim 9. For additional reasons similar to those discussed above with respect to claim 9, withdrawal of the rejection and allowance of claim 19 are respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, the applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Date: July 29, 2004

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